

ASK QUESTIONS TO MAKE DATA DRIVEN DECISIONS

WHY QUESTIONS MATTER WHEN MAKING DATA DRIVEN DECISIONS by GOOGLE

These notes are for the Ask Questions to Make Data-Driven Decisions taken from the Google Data Analytics Professional Certificate course available on Coursea.

SOLVING PROBLEMS WITH DATA

Google's six types of problems solved with data:

1. **Making predictions** - use data to make informed decisions about what will happen in the future.
2. **Categorizing things** - group data together based on features that they all have in common.
3. **Spotting something** - when looking at data what do you see that is different from the norm? What is causing it?
4. **Identifying things** - building on step 2 and groups things into much broader concepts (similar to thematic analysis).
5. **Discover connections** - get out your pencil and start joining the dots will help you uncover the cause.
6. **Finding patterns** - by using historical data to see what happened in the past may help you predict the future...

PREDICT - CATEGORIZE - SPOT - ID - CONNECT - PATTERN

DATA AND DECISION MAKING

Google states that data becomes information when it is combined with context e.g. Your finishing time in a race is not as meaningful unless it is compared to your competitors. Moreover, information becomes knowledge when it is turned into something useful.

When thinking about which data to collect consider the two main categories, quantitative and qualitative. The former will allow you to measure what you are collecting, they call it **'The What'**. Use quantitative data to new questions that lead to new discoveries. The later category, qualitative, will enable you find out **'The Why'** behind the results.

Once you know what type of data that you are working with you can start thinking about how the context will deepen your understanding of the problem you are trying to solve. But, tread carefully and be aware of your own intrinsic bias. Encourage the devil's advocate and lower your self defense barriers to counter this.

DATA WITH CONTEXT IS LIKE A CHOCOLATE TEAPOT

STRUCTURED THINKING

Spend more time defining the problem rather than trying to solve it, otherwise you might end up solving the wrong problem. Look for gaps and opportunities, and then identify your options. At the beginning of any project define and agree with the stakeholders an outline of what work you will complete for them, known as the Scope of Work (**SoW**). This may include what reports you will present, what the milestones are, as well as a timeline for the project.

Google state the two most important parts of a SoW are: One, clarify the project requirements and; two, setting project expectations.

They go on to define the four foundations of SoW in more detail:

1. **Deliverable** - this is the work being done. What is being created (be specific)? How much and how long will you collect data?
2. **Milestones** - when you plan to meet these? How will you know when a task is finished?
3. **Timeline** - how long will you spend on each part of the project? How long will the project last?
4. **Reports** - when will you give status updates to the stakeholders? What information will you include in the reports?

SET CLEAR BOUNDARIES AND DON'T GET RAILROADED

TEAM COMMUNICATION

Stakeholder expectations are very important. At the beginning of any project ensure the following:

1. Plan for the **unexpected** and consider what roadblocks might appear along the way.
2. Know your project like the back of your hand, ensuring **consistent** thought.
3. Start with words and visuals to communicate **clearly**.
4. **Communicate** often, but don't spam your team. Try keeping a change log that can updated continually when changes are made.

BE CONSISTENT, CLEAR AND COMMUNICATIVE

SMART QUESTIONS

Using these types of questions will lead to more meaningful insights:

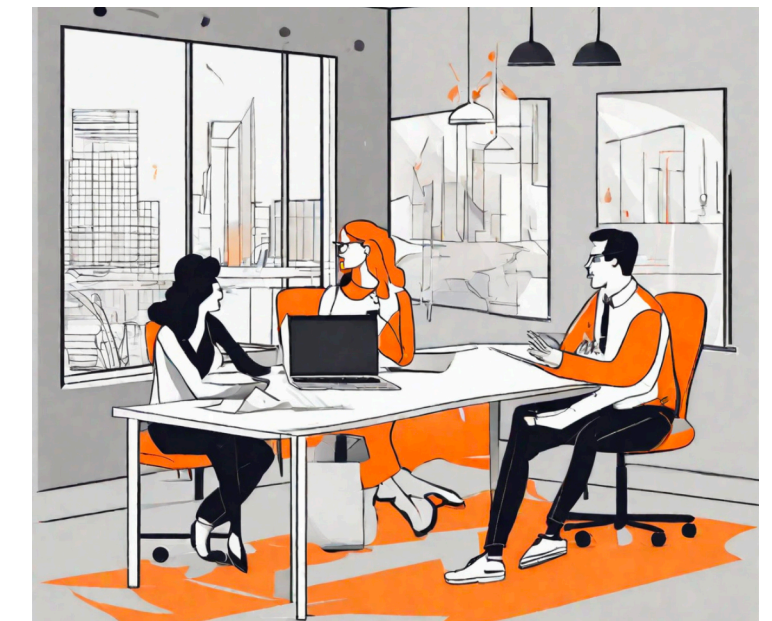
S - Keep your questions super simple and very **specific**. E.g. What percentage of students are logging into Freckle once a week?

M - **Measurable** questions can be quantified and therefore assessed. E.g. How many different social media platforms did we use for our enrollment campaign?

A - Questions that are **action** orientated lead to change. E.g. What differentiation resources will help make learning more accessible for my students?

R - **Relevant** questions are those that are significant to the problem that you are trying to solve. E.g. What external factors changed leading up to the reduction in enrollment?

T - Questions which are **time** bound specify the period of time that needs to be studied, e.g. between March and June 2023?



BE SMART ABOUT WHAT YOU ASK